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SCHOOL AND SOCIETY

Volume V SATURDAY, MAY 26, 1917 Number 126

THE CONTROL OF EDUCATIONAL PROGRESS THROUGH EDUCATIONAL EXPERIMENTATION[1]

By way of introduction I wish to make a few statements about the two terms "control" and "progress."

I wish educational progress to refer strictly to social improvements. Theoretically this view is readily accepted. Practically it is as readily disregarded. This great divergence of practise from theory means that our public schools are not actually serving society, but are, in large measure, marking time on the three R's. This isolation from real life is the criticism made in almost every one of the many school surveys of recent years. And I am compelled to entertain the fear that this gap between school and society is being widened by the recent emphasis on measurements of children's abilities in school arts and the standardization of school work on the basis of so-called "minimum essentials" in traditional school subjects. The perfecting of the school arts is not of itself evidence of educational progress. This view will affect very considerably our attitude toward two types of experimental education presented in this paper.

I wish the term control, as here used, to refer primarily to the stimulation of greater educational progress as defined above. There is danger that we think of control as a check or limitation. Just such a check is probably needed to keep within bounds the devices invented for the purpose of advancing the technique of school arts. On the other hand, the school world should be quickened into a more vigorous effort to develop a much more vital relation to the social and industrial world. This view of control, as that above of progress, affects the position herein taken on two types of educational experimentation.

These two types of experimentation are: (1) laboratory experimentation, in which a study is made of specific activities of children, with the exclusion, so far as possible, of all other activities; (2) school experimentation, in which all the school activities continue under conditions as nearly normal as possible, except for certain modifications, the effects of which are to be studied.

In laboratory experimentation the experiment is of first concern. Instruction of pupils is quite negligible. In school experimentation instruction of the pupils is of prime importance and the experimenter must select the data he wishes for study.

Laboratory experimentation is carried on by adaptations from the psychological, biological and physical laboratories. The specific problems selected have become essentially quantitative and the method of study has become, consequently, largely statistical. School experimentation is essentially social in character. It is an effort to help the pupils adjust themselves more adequately to the complex environment in which they live. The problems are, therefore, largely qualitative, and the method of study is like that of most of life out of school; *i. e.*, interpretation, measurement, judgment, according to circumstances.

I wish to discuss briefly laboratory experimentation and then outline some prob-

[1] Paper presented before the National Council of Education, February 22, at Kansas City.

lems for school experimentation in which the issues are, as I view them, much more fundamental and important.

Let me say at the outset that I am in full sympathy with the scientific movement in education and that I recognize much of value in the use of statistical methods in educational problems. I believe the statistical method will play a much larger rôle in school experimentation later than at present.

A few words only are needed to point out typical problems studied by laboratory experimentation. Educators and professionally trained teachers are quite well acquainted with these studies, though the public is still quite in ignorance of them. These studies are largely upon the relative efficiencies of various methods of teaching reading, writing, arithmetic and other conventional school subjects, as well as various types of the learning process.

Efficiency of reading may be cited as a type of experimental study in school subjects. This topic is usually separated into two parts, formulated into two problems: (1) what is the rate of reading; (2) to what extent is the reading comprehended. A third question naturally arises, namely, what is the correlation between rate of reading and comprehension. An experiment would consist of certain tests, followed by exercises in reading and reporting comprehension of what was read, and this in turn followed by further tests.

A second illustration of laboratory experimentation may be taken from the problem of the learning process. A specific problem may be to find the best method of memorizing sense material. Here the aim is to determine whether it is better to memorize by the so-called part method, or by the whole method. Various provisions may be made for exercises in memorizing. Tests are given to measure the efficiency of the two methods in terms of the number of lines learned per hour.

No further illustrations are needed.

Such laboratory experimentation and allied tests doubtless lead to results of some value. For example:

> Educational science and educational practise alike need more objective, more accurate and more convenient measures. . . .[2]
>
> Laboratory experimentation . . . will show what methods in current use are most effective under conventional conditions.[3]

Such experimentation and accompanying tests have supplied us with knowledge—of a sort—as a substitute for speculation. On the other hand, in view of school experimentation which I wish to strongly recommend, let me call attention, briefly, to certain real dangers in the prevailing emphasis upon this laboratory experimentation.

The first danger is that this experimentation be conducted for the purpose of science alone rather than for the social betterment of boys and girls. Note a few illustrations of this danger. A well-known writer on experimental education has recently described an experiment in efficiency of reading.[4] Three elements in a complete determination of the efficiency of reading are suggested: (1) the rate of reading; (2) the amount which is retained; (3) the extent to which what is read suggests relative trains of thought. Experiment is made on the first two because, as the experimenter says, "these are the elements most easily measured." It is indeed easy to experiment with pupils upon the number of lines they can memorize, or the number of words they can read in a given time. Another experimenter in the efficiency of reading scores comprehension of the material read by

[2] Thorndike, E. L., *Teachers College Record*, 15, No. 4, p. 1.

[3] Dewey, J., "Experiment in Education," in Monroe's Cyclopedia of Education.

[4] Freeman, F. N., "Experimental Education," 117 *sq.*

counting the number of written words which express the thought of the test passage, on the ground that this method is "easy, rapid and objective."[5] If our educational experimentation and tests be limited to those elements which are easily measured, under all probability the purpose is primarily science for its own sake, rather than for the social improvement of children.

And I am impelled to maintain further that in the attempt to follow laboratory methods in the more exact sciences educational experimentation fails to take into adequate account conditions of the pupil experimented upon. For example, in experiments upon the learning process, emphasis is given to regularity in the time of the day, but no account is taken of physical and mental conditions of the pupil. The one is easy to control, the other difficult. The one condition admits of considerable scientific exactness—whatever be the value of the conclusions reached; the other condition contains so much of the personal equation that less exactness is possible. Thus scientific exactness, even in comparatively petty problems, is chosen at the sacrifice of educational products.

The second danger is that laboratory experimentations do not touch problems of real value, from the social point of view. The experimenter forgets, for the time at least, his theory of educational values. He is bent on certain knowledge without reference to social efficiency. For example, the perceptual process in reading is being studied. Selected words or sentences are exposed before the subject for a moment. The subject is directed to write down what he is able to recognize after each exposure, but not to give his reply aloud to the experimenter.[6] The real test in this case is, in large part, *writing down*, not reading. People—children indeed—can read when unable to write what they comprehend. We are not justified in measuring efficiency in reading by the subject's written report or by the number of words pronounced in a given time. A real test of efficiency in reading may be made only when the pupil is reading for a definite purpose other than that of the test. The rate and comprehension might then be taken into account. Laboratory experimentation is directed to the mechanics of reading, under artificial conditions, not to efficiency of reading in real life.

In support of this position Professor Dewey's own statements are most appropriate.

> The comparative definiteness and accuracy of such results is often apt to blind those undertaking the experiments to the limitations of their educational value. . . . There are certain questions of underlying motivation, purpose, spirit in education which can not possibly be worked out under laboratory conditions, until they have first been introduced under school conditions; and these problems are educationally the more fundamental ones. In short, laboratory experimentation . . . will show what methods in current use are most effective under conventional conditions; they will not test the relative worth of the conventionally current type of education as compared with some suggestive reform type.[7]

The effect of this emphasis upon scientific method *at the sacrifice of fundamental problems* in education directed toward social efficiency is already seen in intensifying attention upon the mechanics of school arts, rather than upon the values of life acts. And this emphasis continues in the face of modern educational theory and current community demands that our public education be more immediately related to social life.

Quite in contrast with this laboratory experimentation with school practises

[5] Stark, B., *Journal of Educational Psychology*, 6, 13.

[6] Freeman, F. N., "Experimental Education," 111.

[7] Article on "Experiment in Education," Monroe's Cyclopedia of Education.

under artificial conditions, I wish to urge that educational experimentation be directed to larger social problems and conducted under normal school conditions. This form of study may be called school experimentation, in that the experimentation here proposed is carried on as a part of the regular work of the school.

Illustrations of this experimentation may be found in a large number of schools, public and private. Progressive superintendents and teachers are trying various plans of making their work more effective. But much of such experimentation is local, temporary and unscientific. Conditions are not carefully studied and results are not critically examined and publicly reported.

But a few school experiments have attracted wide attention. The continuation schools of Munich, organized by Dr. Kerschensteiner, sought to supplement apprenticeship work by instruction in trade and citizenship. Dewey's elementary school in Chicago sought "to bring the school into closer relation with home and community life . . . to break down the barriers which have unfortunately come to separate the school life from the rest of the everyday life of the child." Superintendent Wirt in the Gary schools is developing a school program that would enable all pupils to be busy all day long at work, study and play under right conditions.[8] Madame Montessori opened her school in Rome with the problem of improving the physical and social conditions of children as they live in certain tenement houses. At the University Elementary School of the University of Missouri an attempt is being made to meet new demands for a more practical education by the selection and organization of a curriculum strictly in terms of the activities and environments of both children and adults. The central problem is, to help boys and girls to do better in all those wholesome activities in which they normally engage.

In the work of these five schools, suggested here as types of efficient school experimentation, two important principles are readily discerned. First: Educational experimentation on problems of vital social significance must be carried on in the midst of all the other activities of the school. These activities have much to do with the results of such experiments. Dewey's experiment would not have been denied its great contribution to the school world had it been reft of its complex school conditions. The Gary system would not have been known had Mr. Wirt's study-work-play program been tried in other than normal school conditions with all the complications involved. In other words, *these problems cease to be educational problems when they are removed from the situations in which they normally arise.* Recognition of isolated words by the brief exposure method is not an element in real reading. Real reading is the acquiring of ideas through letters, syllables, words and combinations of words guided by varying purposes according to varying conditions. Remove these purposes and complicated conditions and we have, not reading or even an element of it, but only recognition of individual characters: an exercise in the mechanics of reading. Laboratory experimentation deals with these empty exercises; school experimentation provides opportunity for real reading and then examines what takes place.

The second principle suggested by these five schools is this: Pupils must be unaware of the experiments in which they are subjects. Only in this way is their behavior normal. The behavior of a fifth-

[8] Wirt, W., Introduction to R. S. Bourne's "The Gary Schools."

grade boy in the presence of formal columns of digits, a stranger as proctor, and a stop-watch as timekeeper, can not be normal. Such an exercise is not found in the commonplace life of a fifth-grade pupil —seldom is it found in even the most formal of schools. The experimenter of today is taking averages and making curves on the ground that deviations due to artificial conditions counterbalance in a large number of cases. The results would be far more reliable if these averages were made of abilities in strictly normal conditions. What we really want is knowledge of the abilities of pupils in real situations. Such is the demand of life outside of the school. It is the principle applied in school experimentation, in contrast to that used in laboratory experimentation.

Educational experimentation of this nature may well be conducted in two classes of schools. At university centers such experimental schools may be conducted in the atmosphere of professional freedom. And much fredom is necessary to prosecute experiments of a reform type. The university has always been recognized for exactly this freedom of enquiry. In the public schools adaptations of the university experiments may be made. The experiments of Dewey's elementary school have carried over into many public schools. Under the direction of the division of education at Harvard University an experiment was undertaken in the public schools of Newton, Mass. Adaptations of the work of the elementary school at the University of Missouri are being made in the schools at Mexico, Mo., San Diego, Cal., Ravenia, Ill., and other places. The most recently proposed experimental school under university auspices, to be directed by Teachers College and financed by the General Education Board, will ere long have its influence in public schools. However, in case public-school officials have a novel insight and a strong inspiration for educational advancement, and in case local conditions are favorable for pioneer work, such experimentation may well be initiated in public schools. Such is the case in the Munich continuation schools and in the Gary schools.

Two conditions are of special importance. First: Considerable time is needed. Real injustice was shown the Gary system when judgment was passed after a trial of less than one year in New York City. Experiments in the mechanics of reading, writing and the like may be adequately completed in a few periods of exercises. We must be content to wait several years that educational experiments of a social nature may have time to reach results. Educational experiments conducted in schools rather than in laboratories are so complex in nature that much longer time is necessary. A second condition follows: The results of these experiments must be expressed in terms of purposes rather than in terms of the machinery of such purposes. Again, it was a gross injustice to the Gary system to measure its value by formal tests in certain of the traditional school subjects, as conducted in the New York schools. The efficiency of the Gary experiment, in New York or any other city, must be measured in large part at least by the effects of its work-study-play program on the social life of the pupils. Here is a difficult problem for the "efficiency expert," but he must face it.

We must not ignore many dangers evident in this school experimentation. For example, there may be a lack of precision due to apparent indefiniteness of data, and there may be loose personal speculation due to enthusiasm to accomplish purposes. But, as Professor Dewey says: These "results are less quantitative, seemingly less

accurate and scientific, just because they are dealing with matters educationally much more important." Here again the scientific educator has his opportunity—indeed, his responsibility—to work out scientific methods of studying problems in complicated school conditions as well as in simple laboratory conditions.

By way of conclusion, I wish to propose a possible program for professional service on the part of this National Council of Education. A Committee on Educational Experimentation should be appointed (1) to suggest problems for experimentation; (2) to advise certain schools to undertake such investigations; (3) to counsel with these schools in their methods of work with special reference to securing cooperation; (4) to secure the publication of reports of such studies.

This National Council of Education is in a position to wield far-reaching influence. School officials and school communities would welcome assistance from a national organization of this character. The committee should represent both the university schools of education and the public schools. Members of this committee should be selected from places where there may be large opportunity for such experimentation. The problems studied should be large educational issues rather than limited schoolroom methods. I believe the curriculum contains the most fundamental of present issues. The question is not one of how much geography or how little arithmetic is necessary in the schools; it is not a question of minimum essentials in language or history. The real issue is: What is the school occupation that will contribute most effectively to improving the out-of-school lives of our young people. Problems of organization, methods, equipment and the like are strictly subordinate. Extensive cooperation may be secured through this national committee by way of counsel, reports and publications.

This is an appropriate time for well-directed, concerted action. This National Council of Education has an opportunity —and therefore great responsibility—for executing some extensive plans of furthering educational progress through school experimentation.

J. L. MERIAM

UNIVERSITY OF MISSOURI

A WORKINGMAN'S COLLEGE[1]

WE are gathered to celebrate the making of a great invention, for there are inventions in education as well as in machinery. This invention is bound to have an influence far greater than any of us here present can imagine. The folks who witness the beginning of an invention can never look along its course to see what its effects will be. Once in a while we are hauled up with a shock and forced to see what a great invention means, as we were a few days ago when we faced the fact for a few moments quite clearly that if the submarines could do what their employer told them to the course and conduct of this whole world and of all its people would be different for all time. This invention whose making we are celebrating to-night is different from that in that it is meant to upbuild not to destroy; I verily believe that it too is a major invention so indispensable and necessary that it will run around the earth and change the lives of men in many quarters of the world.

This is a workingman's college, and we are all workingmen. Some of us work longer hours than others. I am inclined to think that teachers work the longest hours of all. I have heard of movements for the eight-hour day in many departments of in-

[1] An address at the banquet following the installation of Mr. Frank P. Speare as president of Northeastern College, Boston, Mass., March 30.

dustry, but never in my own—and some of us work harder than others, but we all work and are proud of it. In the disordered world of old time work was a thing for slaves and free men tried to keep from doing it. But when Christianity came and men took it seriously the monks of blessed memory made work a sacrament of the religious life. It was St. Benedict who divided the monk's day into three parts, one for prayer, one for work and one for study. That was a well-nigh perfect distribution. We want to keep our work. It is our greatest necessity and to be without it is our greatest loss. Some one has said that the saddest line of all the many sad ones which Shakespeare wrote is not the lament of Wolsey, nor the grief of Lear nor the heart crushing despair of Hamlet, the saddest and most tragic line of all of them is the anguish of the Moor when he looks out upon his fallen fortunes and epitomizes his woes in the fact they brought home to him, "Othello's occupation's gone."

When work is gone, all is gone. We hold fast to our work; we do not want to lose it; we want more occupation, and we want an opportunity to learn to perform the one we have better and better. We do not want other men to form our opinions for us. We want to form them ourselves. In this free democracy we do not want to be intellectual slaves to any man. We do not want to be deluded by superstitions and perverse misconceptions which force us to put up with errors and mistakes and bad conditions that we ought to fight against and put down. We want to go on with our work, but we also want to study so that we may increase our skill, enlarge our insight, and live in the world of understanding and aspiration which philosophers, scientists and literary men have given us as our inheritance if we will only enter upon and possess it.

We want two parts in our daily program, working and learning. We look upon work as our life business and no matter how far ahead we may look we can not see the time coming when we shall be willing to give it up. No more can we see the time coming when we shall be willing to give up studying. It too is a life business, a lifelong occupation. When we turn to the school and colleges and universities and ask them to help us they can not do it. Their conception of education is different. Their hours of instruction come at the very time we are not free, their long vacations are a hindrance. Their course of study with its great emphasis on formal discipline is not what we want. They are made and intended for the young. We want instruction for adults. Again our children must go to work early and can not spare the long years from productive labor that are required for the college course. Yet these same children are the most capable and serious-minded of the young people in our land. We want opportunity for education for them as well as for ourselves.

It was considerations like these which prompted men who were genuinely interested in bringing opportunities to the workers to open mechanics' institutes in England and America in the early decades of the nineteenth century. For the most part they failed because their course was too narrow. In 1854, a band of great spirits opened The Workingmen's College in Great Ormond Street, London. Frederick Dennison Maurice was its president and such mighty men as John Ruskin, Charles Kingsley, Ford Maddox Brown and Tom Hughes were teachers in it—of Tom Hughes it is said that whether he was speaking on sanitation or sparring or singing his favorite song "Little Billie" his work there continued to be one of the chief interests of his life until the end.

"What we want to make workingmen

feel," said Maurice, "is that the daily ordinary business of life is compatible with —nay is in strictest harmony with—the best and highest knowledge." But as soon as the great group that initiated it disappeared this school fell away. I am not sure that it has ceased to exist. I think it has not, but it has not produced a new education as its founders hoped that it would. The London Polytechnics form an interesting link in the history of this effort, but of them I shall not speak.

In 1898 Thomas Davidson gave some lectures at the Educational Alliance on the East Side of New York on the general subject, "The Problems which the Nineteenth Century Hands over for Solution to the Twentieth." He spoke as I have been speaking of the inaccessibility of the higher education to those who work. He said:

> It is to these that the problem of the higher education chiefly relates. The educational question of the day is: how shall boys and girls who are both capable and desirous of receiving a higher education, but who are now compelled by poverty to go to work at the age of thirteen or fourteen, be enabled to obtain that education. I shall not undertake to answer this difficult question. It must be handed over to the twentieth century.

After the lecture was over, in reply to the question of a number from his audience—How shall we do this thing? How shall we get this education?—Mr. Davidson said to them that if they would form a club he would devote one evening a week to it. That was the beginning of the Breadwinners' College. These two institutions were the creation of the best and most devoted men that England and America have produced. They were started in the conviction that the state can not flourish and democracy can not exist until the higher education is made accessible to those who work for a living, but hunger and thirst for educational opportunities. But when the founders died the great work which they had started lapsed and faded away. Just the same thing happened to them that happened to the splendid educational work that King Alfred set on foot. When he died it perished with him because there was no organization to take it up and carry it forward. The people of his kingdom had suffered so long from the inroads of invaders and were so used to warring that the monasteries which had been broken up and destroyed could not be restored and as all education in that day depended upon the monasteries for its continuance and permanent furthering, a saint had to arise and call the people back again to the monastic life before schools and education could be restored to England. That saint was Dunstan.

We have here in our own day a parallel case. A great new idea of untold value has waited for an organization to take it up and give it the permanence and the extension of its own being. I think you will agree with me that in the Young Men's Christian Association it has found the organization which it needed to uphold it and supply the driving force which it required. We are to-night celebrating the assumption of that responsibility by this member of that great organization. Others will follow its lead and example in rapid succession. No man can begin to estimate the good they will do. We are to-night witnessing the beginning of a new type of educational institution of priceless value, for it will give the education for adults which is demanded, the education united with work which in time will spread throughout the world.

ERNEST C. MOORE

HARVARD UNIVERSITY

THE CLASSICIST OR THE UTILITARIAN?

EDUCATION in a democracy, if it is to be effective, must meet the demands and needs of the public, as well as maintain some

unity of ideals and thought which is pertinent to the existence of a nation. In general, two pretty distinct factions, with sharply drawn lines of demarcation, are found at work in the education of the United States, namely, the classicists and the utilitarians. The aims, the methods, and, to some extent, the results of the classicists, are too well understood to need further elucidation than their honorable title implies. However, in the case of the utilitarians it is necessary to explain that the word is not used here in the sense in which it is to be found in some socialistic and humanistic philosophies; but rather to embrace those modern educational activities which hope, by means of vocational, prevocational, continuation, and junior high schools, to be of practical service to the great mass of pupils who have no desire and often no ability to study the classics or to enter college; but, who, if given sufficient opportunity, will train themselves for an active and serviceable life and efficient citizenship. That this conflict in educational theory may be the better understood, it is well-nigh essential to recall something concerning its development.

Ancient history reveals several important facts. Social development has been a series of evolutionary steps from savagery to civilization and modern culture. Education is found running parallel with this growth and becoming more intricate as the complexity of social relations increases. In fact it might not be too much to say that education has been one of the motivating forces in this whole process. Several nations have had their rise, their maximum of power, and finally their decadence; but Greece will probably stand forever as the greatest of these. Deriving little from the Egyptians and their barbarism, more from Spartan military formalism, the Athenian civilization and education rise gloriously to give "beauty and happiness" to all ages. It might be well to pause a moment here, and attempt to discover whether or not these Athenians recognized a utilitarian motive in their schools. That is, did they aim to be of use to the people and to the needs of the state? Certainly, since they were the progenitors of the classical tradition, it had for them no existence.

Two things, probably more than anything else, show why this educational system existed: the words of its great teachers and the ideals underlying good citizenship. Protagoras, it is asserted, said that "neither theory without practise, nor practise without theory avails at all." In "Euthydemus" Plato claims that "the knowledge which we want is one that uses as well as makes." And again in the "Republic," "the useful is the noble and the hurtful is the base . . . no one will love that which gives him pain, and in which after much toil he makes little progress." It is clear, from these quotations, that what was wanted, was not only the ability to live but to know *how* to live. Theory was needed, but also practise and application. And both theory and practise in large quantities were what Athens required of her citizens. Each free man must be able to hold office and to participate intelligently and effectively in the court, council and assembly. Evidently the only method by which he could gain the knowledge necessary for this responsibility was education. So, generally speaking, the motive or aim of Athenian education was utilitarian. And thus the classical traditions were set for utilitarian purposes.

It is now necessary to follow quickly the path which brought this tradition to America. Rome took over the Greek forms and organized them to suit her needs. With the fall of Rome, the educational system was carried over into the Christian church. Here it gradually became formalized and warped, so that by the time of the Reforma-

tion there had developed an inflexible system which did not meet the needs of the majority of the people and was interpreted "in terms of language and literature instead of life." A hard, laborious, linguistic study of the classics was held to be excellent formal discipline; moreover it became the end of education and not the means. About the only people who seem to have profited from this were the scholars and the clergy.

Then Martin Luther appeared with new vision of educational ideals. He said:

> Were there neither soul, heaven, nor hell, it would still be necessary to have schools for the sake of affairs here below. . . . The world has need of educated men and women, to the end that the men may govern the country properly, and the women may properly bring up their children, care for their domestics and direct the affairs of their households. . . . I by no means approve of those schools where a child was accustomed to pass twenty or thirty years of his life in studying Donatus or Alexander, without learning anything. Another world has dawned in which things go differently. My opinion is that we must send the boys to school one or two hours a day and have them learn a trade at home for the rest of the time. It is desirable that these two occupations march side by side.

One is somewhat surprised at the tone of these statements which is quite in accord with some modern attempts at reorganization of the school system.

It was, nevertheless, a long time before these ideals were to be realized even partially. Meanwhile the Latin grammar school, with a narrow classical curriculum, had found a firm foothold in England, and it was from this model that the first school in America, established in Boston in 1635, drew its inspiration.

During the colonial period, the classical studies, as presented in the Latin grammar school, admirably served their purpose, which was the business of educating the few who intended to enter the university. However, after the Revolution and the resultant change in social conditions from provinces dependent on the crown of England to a youthful, progressive republic, the demand became insistent for an education, the scope of which would give an opportunity to the many who did not want the training necessary for matriculation in the university. This led to the rise of the academy movement. These academies were, for the most part, private, endowed schools usually under the domination of some religious sect. A great number of subjects were taught and it is evident that the aim was to provide vocational training for their pupils. Several important advantages attended the introduction of these schools into the United States: the first opportunity for girls to obtain a secondary education, the introduction of science not only into the academy but also into the college, encouragement for state support of secondary education, and breaking the way for vocational guidance and education.

With the growing success of these academies, the Latin grammar schools began to disappear. In the meantime, during the early part of the nineteenth century, the state had established a few public high schools which offered courses similar to those of the academy. For some time, though, they were not able to compete successfully with the academies. Then came the great reconstruction period after the Civil War, with the consequent modification of industrial conditions. Whereas the local, home product system with its apprentices had been the rule, now the manufacturing was carried on in large factories. As a result, home life was changed and community conditions became urban instead of rural. All this naturally made considerable difference in the informal training received outside of school. Problems that had previously found their solution in the home must now be handled by the school.

In order to complicate the situation further, Europe was sending emigrants by the thousands and thereby making the school population increasingly heterogeneous.

The academy did not and could not meet the demands of this new age in a truly democratic nation. First, the schools were not free, and secondly, they were often under religious supervision. Then too, gradually the academy had lost sight of its utilitarian aim and tended to emphasize more and more the classical tradition. In fact many of them became colleges. The universities of Pennsylvania and Princton, for instance, were originally established as academies. In the meantime the high schools had slowly developed the vocational side of their work. This was and is necessary on the part of the school system. For, in order to make efficient citizens out of this heterogeneous population, the state is obliged to educate the boys and girls in such a way that they can go into the trades, business and industries as well as the professions and do capable work. Moreover, national ideals must be pulled together and social solidarity maintained; this can be done only by means of a thorough grounding in English and the social sciences.

The present tendency to give practical training which hopes, in part at least, to bridge the gap that exists between school systems and local life and to teach pupils how to apply what they learn, by no means eliminates an academic course of study with its traditional classical elements for those who want it. In fact there is no valid reason why any pupil should be deprived of the charm and regulating influence of true ancient classicism. But, for the majority, the acquaintance should come through good translations and sympathetic teaching. Too much emphasis has been placed heretofore on the linguistic and literary side of classical study and not enough thought has been given to the liberal phase of the work. If this change were made, time would be saved and interest, instead of undergoing a deadening process, would be revived. With regard to that hobgoblin, mental or formal discipline, President Eliot says: "there is no single subject of study which is essential to the development of an effective intellect."

Still, there is one difficulty which must be met. It arises from the point of view of the pupil which is based on the idea that vocational work in the school is more of a "snap" than the older curriculum. Here it is the duty of the teacher to make the pupil realize that

> real education is hard, for it is spiritual ministration. The temptation to substitute mere physical manipulation for living interest, spiritual insight and comprehension ripening into action is the sin which besets us.[1]

The Greeks realized this dilemma and have accordingly left a considerable body of doctrine which ought to be in the hands of every teacher.

At the present time the danger lies in the chasm which separates the classicist and the utilitarian. Those who advocate reorganization refuse to acknowledge the good in ancient classicism and in their haste to revolutionize school administration pay little or no heed to the unifying principles and ideals which the Greek thinkers have prepared in beautiful, clear form. On the other hand those who oppose the reform seem determined to ignore the fact that much of the old method, which in reality is not truly classic, will not serve modern needs. At the same time they do not recognize the opportunity for reinterpretation of the general principles of ancient classicism in terms of modern conditions. The "Republic" of Plato alone would keep somebody busy a long time, for much of it is relevant to modern problems, more so,

[1] "What is Education?" by E. C. Moore, p. 26.

indeed, than a large amount of the publications to-day. If only the classicist would abandon his note of bitterness and the utilitarian realize his ignorance of values in the ancient tradition, fusion, at least to some extent, might take place. Then educational work could proceed with a more or less unified aim.

There is a great need for both factions and, certainly, they should be drawn together, if by no other cause than loyalty to the state and the individual.

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EDUCATIONAL EVENTS

TESTING OF MUSICAL ABILITY IN THE SCHOOLS

SEVENTY children of Sioux City will be especially encouraged to study music as a result of the survey of musical talent recently made there by Dean C. E. Seashore, head of the department of psychology at the University of Iowa.

In this number are twenty-four who have never had any training in music. The tests disclosed that they have marked natural ability. Others of the seventy have had some training.

Dr. Seashore and his assistants made the survey without knowing anything about how the ability of the children was regarded by others. It was significant, therefore, at the finish that the two children whom Dr. Seashore designated as having by the tests shown more evidence of talent proved to be two children who are recognized in Sioux City as outstanding in their ability. One, a girl of 12 years old, is a concert pianist.

The survey at Sioux City and a similar survey at Charles City are the first of the kind ever made. They represent the beginning of what psychologists believe will be a very important movement in vocational and avocational guidance.

Tests were made of the talent of every child in the seventh and eighth grades. From the facts gathered the experts determined what degree of musical talent and what peculiar characteristics in talent each pupil had.

Some of the questions considered by the psychologists were these: To what extent are children who have the best natural talent the ones who receive the best musical instruction? How many of the exceptionally good that have had no musical education are aware of their natural ability? What duty comes to the parents who get concrete, scientific information about the presence of unusual musical talent in their child? What duty comes to the community toward the exceptionally talented child who can not afford a musical education? Why is it that some of those who have had the most training do not rank high in musical talent? For what type of instrument is each talented person best qualified? What type of music is each one best fitted for? What is the relation between general brightness and musical talent? What is the relation between the recognized ability to sing and the measurements of musical talent?

All these questions were answered by the report on the survey. Children who were found to have especially good talent will receive their records and will be encouraged through follow-up work to make the best of their talent for themselves and for their community, as development of their talent would offer a most promising investment.

Professor Seashore and his coworkers believe that a survey of musical talent should be a regular part of the musical instruction in the fifth grade. Children at that grade are mature enough to begin musical instruction of a serious nature if it should be recommended.

CHILD MORTALITY IN GREAT BRITAIN

A REPORT on child mortality by Sir A. Newsholme, medical officer to the Local Government Board, has just been published and is summarized by the London correspondent of the *Journal* of the American Medical Association. It deals with the years 1911–14, and therefore may be regarded as uninfluenced by war conditions. During these four years, 575,078 deaths occurred in England and Wales

under the age of 5, more than a quarter of the deaths at all ages. There is a great contrast between the mortalities of industrial towns and industrial areas in large cities and places inhabited by the better classes. Thus, in London, Shoreditch had 341 and Finsbury 216 deaths per thousand births against 112 in Hampstead. In the great towns, Burnley had 257, Wigan 254 and Middlesborough 251 against 96 in Ilford and 123 in Swindon. In discussing the causes of this excessive mortality, Sir A. Newsholme dismisses the facile explanation that it is due to ignorance among mothers of the working class. He does not consider that this exists among them to a much greater extent than in other classes of society. Moreover, breast feeding is commoner among them. He attributes the difference in mortality between the two classes to the following causes:

1. The well-to-do mother is commonly able to devote herself to her infant and have assistance in this duty; the working-class mother is single-handed, and has also to perform, unaided, all the duties of her household, including the washing and cooking for her husband and herself and possibly for several children.

2. The well-to-do mother is commonly able to make sure that the milk for her infant is purchased under the best circumstances, is stored in a satisfactory pantry, and is prepared under cleanly conditions. The working-class mother often is supplied with stale, impoverished milk, may have no pantry, and, except when suckling her infant, is handicapped at every stage in the cleanly preparation of her infant's food.

3. If the well-to-do mother is ill, adequate medical and nursing assistance is at once available, and the child's welfare can be safeguarded; if the working-class mother is ill, the child usually must suffer with its mother.

4. If the child of the well-to-do mother falls ill, everything that good nursing and medical attendance can furnish is commonly at once available; for the child of the working-class mother the state of matters is remote from this ideal. Facilities for medical attendance and nursing vary greatly in different districts. In London, in small towns and in rural districts, the nursing assistance provided by district and county nursing associations is usually more generally available than in industrial towns. Prompt medical assistance is of great importance. It is often not available for children of wage earners, and particularly for the children of unskilled workers.

5. Infants and nursing mothers are rapidly influenced by their environment. This environment is complex. The mother is the main element in the environment of the infant. If she is overworked and suffering from chronic fatigue, her infant must suffer; directly, because the mother's milk under these circumstances is liable to be impoverished or otherwise unwholesome, or indirectly, owing to insufficient attention to the infant. The infant of the well-to-do mother is less liable to suffer in either of these ways.

6. Not only are the milk supply and the storage and preparation of artificial food important parts of the environment of the infant, but also the housing conditions of the family, and the sanitary conditions of the back yard and of the street in which the house is situated.

The remedy for this relative "social helplessness" is that medical advice and nursing assistance should be made available for the poor as promptly as for others. The physician, the sanitary inspector, the health visitor and the trained midwife must all be available to give the requisite advice. Such advice is becoming available to an increasing extent.

THE NEW YORK CITY SCHOOLS AND NATIONAL SERVICE

AT a meeting of the New York City Board of Education on May 9, the Special Committee on War Service reported that it had devoted its consideration to problems connected with the placing of boys from the high schools at work on the farms, organizing farm gardens for the elementary schools and arranging the work of the cooking and sewing departments of the elementary schools so that they will cooperate with the Red Cross activities and other agencies engaged in war service. District Superintendent William J. O'Shea has been

assigned to assist in certain work of organization, and District Superintendent Lyon has been continued in the assignment to the committee for the purpose of establishing camps for high-school boys. A subcommittee consisting of George E. Hewitt, of the Evander Childs High School, John D. McCarthy, of the Morris High, and Frank A. Rexford, of Erasmus, were appointed to work under Associate Superintendent Tildsley in making a survey of the boys in the high schools available for farm service, of the teachers competent and willing to serve as supervisors of the boys in farm service and to perfect a plan of procedure whereby the high schools would be ready to meet the demand for farm service on the part of the pupil.

In the organization of the farm gardens for the elementary schools, District Superintendent Reynolds was assigned to the supervision of this work for Manhattan and Richmond, District Superintendent Veit for Brooklyn, and principal Angelo Patri for the Bronx, and District Superintendent Dwyer for Queens. Seven thousand circulars have been distributed through New York and certain parts of New Jersey, Connecticut and Pennsylvania for the purpose of acquainting farmers with the supply of labor available among the boys in the high schools of this city. Agricultural organizations, express companies, milk companies, newspapers and railroads have assisted in this distribution and already applications have been received from boys. There are now 250 boys out doing farm work and eight definite groups of boys have been established at a camp at Newburgh; Earlville for Erasmus boys under Mr. Rexford; in Essex County under Channing W. Gilson of Manual; at Plattsburgh under Walter M. Wood, of Stuyvesant; at Sayville, L. I., under Arthur A. Bryant, of Clinton (to begin May 20); at McClean, Cortland County, under F. G. Trapp, of Morris; in Westchester, under the Commission of General Safety, and at Staten Island where boys will be in a camp to be maintained by a committee of Staten Island citizens insuring financial responsibility, under William A. Hopkins, of Stuyvesant, with another teacher.

The report included a resolution excusing the absence of all officers and employees of the school system when such absence was occasioned by military or naval service required by the United States Government; and authorizing the city superintendent to permit schools of 16 or over to perform, with the consent of their parents, labor on farms and gardens, and to assign teachers to supervise them.

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY AND THE WAR

The faculty of the Massachusetts Institute of Technology have passed the following resolutions:

Whereas, the nation is now at war and must therefore receive the aid and the cooperation of its states and their many organizations, *Be it resolved:* that the faculty of the Massachusetts Institute of Technology hereby records its desire to assist and cooperate with the President and the Congress of the United States by affording every opportunity for students to enter for sufficient reasons the service of the United States before the end of the term.

In order that its seniors may be available for military and civil service, it is voted that the candidates for graduation who were clear at the time of the declaration of war, upon entering the service of the country, be excused from further exercises of the term, and be at once recommended for their degree. It is further voted that the cases of other seniors be referred to the committee on faculty business with power to act.

It is further voted that students of all classes who, at the time of the declaration of war were members of the National Guard, Naval Militia or similar organizations, will be granted leave of absence upon being ordered into active service. If they return to the institute at the beginning of a school year, they will be admitted provisionally to the work of their next year. Upon showing their ability to carry on advanced work they will be excused from the remaining work of the current term.

With reference to students below the fourth-year class the faculty strongly urges that they remain at the institute and complete their technical training. It believes that, for them, this is the most effective kind of national service that they can perform. Those who desire to do so will probably have the opportunity to enroll next fall in the four-year military course, which it is expected the

war department will establish at the Massachusetts Institute of Technology.

Still further in the same direction of affording opportunity for those students who are fit for the work to do service for the country, the faculty of the institute further voted to treat those seniors who are registered in the new intensive ten-weeks' course in naval architecture, of whom there are forty or more, in the same way as if they were enrolled in government service, which will be in effect to excuse them from further exercises in the subjects for which they are registered and to grant them degrees on entering the service.

EDUCATIONAL NOTES AND NEWS

PRESIDENT ALEY has named the following committee on resolutions for the Portland meeting of the National Education Association: J. W. Crabtree, president, State Normal School, River Falls, Wis., *Chairman;* F. L. Keeler, state superintendent of public instruction, Lansing, Mich.; W. W. Davidson, superintendent of schools, Pittsburgh, Pa.; E. O. Holland, president, State College, Pullman, Wash.; M. H. Stuart, principal, Technical High School, Indianapolis, Ind.; E. E. Bass, superintendent of schools, Greenville, Miss.; Susan M. Dorsey, assistant superintendent of schools, Los Angeles, Calif.; Francis G. Blair, state superintendent of public instruction, Springfield, Ill.; P. L. Campbell, president, University of Oregon, Eugene, Ore.; Josephine Corliss Preston, state superintendent of public instruction, Olympia, Wash.; Mary C. C. Bradford, state superintendent of public instruction, Denver, Colo.; C. A. Duniway, president, University of Wyoming, Laramie, Wyo.; A. C. Barker, superintendent of schools, Oakland, Calif.

PRESIDENTS E. J. JAMES, of Illinois, Ross Hill, of Missouri, Charles R. Van Hise, of Wisconsin, Walter A. Jessup, of Iowa, and Chancellor Frank Strong, of Kansas, have been appointed members of the advisory committee on state university war service of the National Association of State Universities. It will work out means by which the state universities can be made of greatest service to the nation and work in harmony with the federal government in time of war.

DR. ROBERT M. YERKES, assistant professor of psychology at Harvard University, has been appointed professor of psychology and head of the department at the University of Minnesota.

DR. LOUIS W. RAPEER, professor of education at the Pennsylvania State College for the last three years, has been appointed dean of the University of Porto Rico. After teaching for six weeks this summer at the University of Montana, Dr. Rapeer will go to his new post early in the fall. He went to State College from the University of Illinois.

DR. CHARLES R. CROSS, Thayer professor of physics at the Massachusetts Institute of Technology, has retired after forty-six years' service and will become professor emeritus.

DR. ABRAHAM FLEXNER, assistant secretary of the Rockefeller General Education Board, has resigned from the New York Board of Education.

DANIEL E. PHILLIPS, head of the department of psychology and education in the University of Denver, and Fred C. Ayer, professor of education in the University of Oregon, will be members of the faculty of the summer session of the University of Washington. Professor Fred E. Bolton is director of the summer session.

AT Harvard University leave of absence for the year 1917 to 1918 has been granted to Professor Robert W. Willson, of the department of astronomy, and to Professor W. H. Schofield, of the English department.

DR. FRENCH E. WOLFE, associate professor of economics at Colby College, has accepted the professorship of economics at Ohio Wesleyan University.

DR. WILLIAM MACDONALD, for sixteen years professor of history at Brown University, has resigned. He is at present enjoying his sabbatical year and is in France engaged in literary work. Dr. MacDonald's chair has been filled by the appointment of Professor St. George Leakin Sioussat, since 1911 professor of history at Vanderbilt University.

AT the Johns Hopkins University Dr. Murray P. Brush, who has been acting dean of the

college faculty since the retirement of Dean E. H. Griffin two years ago, has been made dean. Beginning in 1899 as instructor in French, Dr. Brush has served in the capacity of associate, associate professor and finally collegiate professor.

The Howard Taylor Ricketts prize for research by students in the departments of pathology and of hygiene and bacteriology at the University of Chicago has been awarded this year to Mr. Enrique E. Ecker, for his work entitled, "The pathogenic effect and nature of a toxin produced by bacillus *Paratyphosus B*." The prize was awarded on May 3, the anniversary of the death of Dr. Howard Taylor Ricketts, who died in Mexico from typhus fever while investigating the nature of that disease.

Through the generosity of a Minneapolis business man who does not want his name known, five one hundred dollar scholarships have been contributed to be awarded to women of the University of Minnesota. This makes a total of nine such scholarships available for the coming year.

To accommodate students engaged in farm work, Tufts College will delay its opening next fall until October 4. The scheduled date had been September 20. Students who spend seventy-five full days on farms will receive academic credit.

The number of students who have withdrawn from Oberlin College to enter various forms of government service in connection with the war situation is 179. Of those who have left 15 are women.

At the University of Chicago a fund has been provided by Mr. and Mrs. Jesse L. Rosenberger, "to found an endowment in perpetuity to provide, from time to time, from the income or portions of the income of such endowment, an honor medal to be known as 'The Rosenberger Medal.'" Such medal is to be awarded by the University of Chicago in recognition of achievement through research, in authorship, in invention, for discovery, for unusual public service, or for anything deemed of great benefit to humanity. If at any time it is thought best, the awards may be restricted to persons connected with the University of Chicago and its various departments, including its faculties, students (graduate and undergraduate), and the alumni. The medal may be of such material and design and contain such special inscriptions as may be deemed best, and in such respects may be changed from time to time.

The University of Pennsylvania summer school will not be suspended on account of the war but will be held for the usual term during the coming summer. The regular sessions will begin on Monday, July 9, and end on Saturday, August 18. Registration for the summer school will begin on July 5, 6 and 7. Since the university summer school draws students from every state in the union the university authorities hope this information will be spread as widely as possible. It is assumed that, even in a state of war, it will be necessary for the schools to be continued, and that the teachers be prepared for special and more efficient work. With that end in view the courses at the University of Pennsylvania are mapped out with special emphasis laid on all courses pertaining to school work. Most of the courses will be given by members of the regular staff. Professor Frederick L. Paxson, of the University of Wisconsin, will give courses in history; Professor George M. Dutcher, of Wesleyan University, will give courses in English; Mr. Arthur C. Monaghan, of the United States Bureau of Education, will give courses in education, and Professor Wm. H. Gregory, of the Cleveland Normal Training School, will give courses in geography. An elaborate program for the social entertainment of the summer-school students has been prepared.

Ambassador Jusserand has forwarded to the French and Belgian governments an offer on the part of American students to aid in rebuilding the devastated regions of those countries as rapidly as the Germans are driven back. The plan is to send city-beautiful units of architects and engineers to Europe to reconstruct the ruined municipalities along model lines in order that the war zone in France and Belgium may emerge as one of the

most beautiful regions in the world. Dr. Edmund Janes James, president of the University of Illinois, brought the offer to Ambassador Jusserand. The university at Urbana-Champaign on July 1 will open a special city-planning school to train professional men for service in these units. Each unit will consist of an architect, a landscape architect, an electrical engineer, a highway civil engineer, a municipal and sanitary engineer, a chemical engineer and an economist. The training school, which will combine special courses of the university's school of architecture and its various engineering schools, will teach the cooperation necessary to make the building units effective. The course will last six months, at the end of which time it is hoped to send the first units abroad. Many professional men are already enrolling for the training.

A MEMORANDUM has been issued by the Child Study Society, London, on the educational principles upon which all future school reform should be based. In his introduction Professor John Adams, vice-president of the society, argues that the present time is exceptionally favorable to the course of educational reform, owing to the awakening of general interest in education in spite of the war. In the division of labor between the various committees investigating the subject, the Child Study Society has limited itself largely to the more scientific and psychological aspects. The memorandum consists of five sections, the contributors to which agree with the council that it would be best for the results of joint deliberation to be published impersonally. The pamphlet concludes with a series of practical recommendations arising out of the memorandum.

MR. FISHER, president of the British Board of Education, in a written reply to a Parliamentary question by Sir F. Blake as to the employment of school children in agriculture, said that, although he holds a strong view against such employment in general, he has been convinced that in view of the present emergency he ought to facilitate very elastic arrangements for school holidays for schools or departments which include boys over twelve years of age. He is therefore prepared in respect of such schools or departments in rural areas to give favorable consideration to proposals for extended or additional holidays provided that not less than 320 meetings are held. He stipulates, however, that vacation schools and classes shall be provided during the extended holidays for the younger boys.

THE Edinburgh University General Council has approved draft ordinances for the foundation of chairs of French and of medical chemistry. The salaries of the professors are not to fall short of £800 and £1,000, respectively. General approval has been expressed of a draft ordinance for the creation of a degree in commerce.

THE total number of students of all colleges of Cornell University who up to April 30 had applied at the office of the secretary of the faculty for leave of absence on account of military, industrial or agricultural duty, under the terms of the faculty's resolutions of March 28 and April 18, was 1,456. From the several colleges the numbers of such applications were: College of Agriculture, 667; College of Arts and Sciences, 327; Sibley College, 244; College of Civil Engineering, 49; College of Law, 48; Veterinary College, 82; College of Architecture, 31; Graduate School, 8. Agricultural and veterinary students are applying for leave to about twice the extent that students of other colleges are, in proportion to the numbers enrolled.

ADMINISTRATIVE officials of 180 leading institutions of learning in the United States conferred recently with a committee of the Advisory National Defense Commission and arranged machinery for cooperation with the government during the war. Secretary Baker addressed the conference, pointing out that important defense work can be done by the schools of the country and the educators adopted resolutions embodying plans for active service. The resolutions recommended that the Bureau of Education and the States Relations Service prepare a comprehensive policy of cooperation between the government and the educational institutions, "which will make for

the most effective use of these institutions throughout the duration of the war." As an emergency measure it was suggested that colleges consider dividing the college year into four quarters of approximately twelve weeks each and that where necessary courses be repeated at least twice each year. Secretary Baker told the conference that while the country is prepared to make every necessary sacrifice "it must be saved from undergoing any unnecessary dislocation of the processes of its common life."

THE New York Military Training Commission and the agricultural commissioner are working on a plan now under which students will be released from school, at once if necessary, to work on farms or to join the army or navy. The senate on May 2 passed the Brown bill, providing that for the period of the war the compulsory education law of the state shall be suspended. A clause in the measure allows pupils to be released from school from April 1 to November each year while the war lasts to work on the farms of the state.

THE entire senior class of the College of the City of New York, about 200 students, will be transferred from regular college work to special service as military census enumerators beginning May 15. This transfer will last until May 30. The students are to return for the examinations.

AT a conference of the headmasters of twenty-one New England boarding schools held at Trinity College, Hartford, Conn., a telegram was sent to Secretary of War Baker urging him to reconsider his decision not to establish military training camps for boys between the ages of 17 years and 20 years and 9 months. The message pointed out that many boys of these ages could not be restrained from enlisting in the line if not permitted to attend the training camps and thus much valuable material for the training of officers would be lost. The schools represented were Andover, Exeter, Hotchkiss, Taft, St. Mark's, Groton, Pomfret, St. Paul's, Milton, St. George's, Choate, Ridgefield, Loomis, Middlesex, Berkshire, Westminster, Salisbury, Cloyne House, Sanford, Dolderness and Gunnery. The conference decided to organize for the period of the war and elected R. Bayard Cutting, 32 Nassau Street, New York, as executive secretary.

THE Massachusetts State Board of Education is prepared to cooperate with the State Public Safety Committee and local committees in facilitating the cooperation of certain of the schools in production and conservation of food. It has placed at the disposal of the state committee one of its agents, who will assist in the placement of high-school boys in agricultural pursuits. Through Robert O. Small, deputy commissioner in charge of vocational work, arrangements will be made to bring the several state-aided vocational schools into close cooperation with the several committees. Approval is given to the releasing of both students and instructors in the agricultural high schools either for work on farms or for supervision of home gardens as may be deemed desirable. At the Framingham Normal School, immediately at the close of the school year, there will be started a class in canning and preserving. The students taking this course will be available for the service of the local committees at the opening of the season for food preserving. Both the state and local school authorities of Massachusetts are cooperating in placing students individually, and with adequate supervision. They are not indorsing, anywhere, the procedure of closing the schools or shortening the terms.

ONE hundred and forty "strikers" are said to have left the Colorado School of Mines as a result of the faculty's refusal to reconsider the suspension of several students for hazing a professor. The "strikers" include all the students except 30 seniors. President Parlee has issued a statement saying the faculty could not reconsider the suspensions without undermining discipline. He added that classes would continue to be held even though no students attend.

THE act providing for state-wide supervision of schools has been passed by the Maine legislature and signed by Governor Milliken. Under these provisions, according to the *Jour-*

nal of Education, every municipality in the state is assured of expert direction of its schools. No more sweeping law relating to schools has been passed by a Maine legislature since the enactment of the law abolishing school districts in 1893. Maine for some years has had a law making it permissible for towns to unite for the employment of a superintendent of schools. The new act provides that all municipalities in the state shall be combined into unions for this purpose. The state superintendent of schools is given the authority to arrange the combinations of towns. The local school committees uniting to form a joint committee select the superintendent of schools, fix his salary and determine the amount of service to be given in each town. A superintendent must hold a special certificate granted by the state superintendent of schools, and must devote his entire time to work of supervision. The law clearly defines the duties of the superintendent according to the best accepted practise.

AFTER due warning that all employees of the school department must become citizens to hold their positions, the School Committee of Boston has discharged seven male teachers, a kindergartner and a janitor. Five of the men teachers were temporary instructors. Two of these were Spanish subjects, one an Armenian and two were Canadians. Of the two regular teachers, one was a German subject and, although he did everything possible to secure his naturalization papers, the court would not grant him citizenship. The other, a Canadian, will be naturalized shortly and an effort will be made later to obtain his reinstatement. The janitor who was dismissed is in charge of one of the suburban high schools. He is a British subject and says he is willing to fight if necessary for the United States, but he refuses to be forced into adopting American citizenship to hold his position. All the women teachers have complied with the rules requiring them to apply for American citizenship except three, who are ill and have been unable to go to court. They have signified their intention to become citizens and they will be retained in the service. The kindergartner, who is a Scotchwoman, was discharged.

THE faculty of arts and sciences of Harvard University has voted not only to give special examinations to members of the university who enter the military or naval service of the United States or join either of the American ambulance corps in France, but also to waive examinations for final candidates for admission to Harvard College who enter the military or naval service before June 18. The following vote, covering the points mentioned above, was passed by the faculty on April 10:

That arrangements be made whereby all students under the faculty of arts and sciences now registered in the Reserve Officers' Training Corps and all students under that faculty who by April 25 have registered with the Recorder in Military Science and Tactics 1, and who are admitted to the Reserve Officers' Training Corps before April 28, may devote their full time to the work of the Corps, beginning May 7.

That for such students and for students who leave the university after May 5 to join either of the American ambulance corps in France, special final examinations of two hours each be held from April 28 to May 5.

That for students who, in joining either of the ambulance corps in France, must leave the university on or before May 5, instructors be authorized to return grades as for students enlisting in the military or naval service of the United States.

That final candidates for admission to Harvard College who expect to enter the military or naval service before the June examinations may present their full school records to the Committee on Admission, who will issue certificates of admission on trial in those cases which seem to justify it. Such certificates will be valid only if the candidate is called out before June 24, 1917, and if he enters college within a year after receiving his honorable discharge from the service.

ANNOUNCEMENT has been made at the University of Chicago of the registration for the spring quarter, which shows an increase over that for the same quarter a year ago. In the graduate school of arts and literature 182 men and 165 women are enrolled, a total of 347; and in the Ogden Graduate School of Science 235 men and 61 women are enrolled, a total of 296, making a total for the graduate schools of 643.

In the senior colleges there are 482 men and 395 women, a total of 877; and in the junior colleges 624 men and 440 women, a total of 1,064. The total for the colleges, including the unclassified students, is 2,038. In the professional schools there are 187 divinity students, 202 medical students, 241 law students and 353 students of education, a total of 983. Exclusive of duplications, the total number of men in the university for the spring quarter is 1,928 and of women 1,476, making a total of 3,404, an increase of 328 over the quarter a year ago. In University College downtown the total enrolment for this quarter is 791, an increase of 140. The grand total for the university is therefore 4,195, and the total increase over the attendance a year ago is 468.

At the coming summer session of the University of California there will be given a course in "Theory and Practise of Instruction in Introductory or General Science." This course will be under the direction of the school of education, credit in advanced pedagogy being given for the satisfactory completion of the work. The work will consist of the history of the development which produced this new combination; its aims and purposes. Methods of the laboratory, the recitation and the lecture will be suggested. Its value as educational means will be discussed, as well as its place in the curriculum. One of the chief features of the course will be instruction in the making of simple apparatus from ordinary articles. The educational value of the commonplace will be emphasized. The course will be under the charge of Mr. Percy E. Rowell, director of science of the A-to-Zed School, Berkeley, and author of "Introduction to General Science" and "Elementary General Science." As the California State Board of Education has decided that all normal-school students must offer general science for admission after August, 1917, it is expected that this course will be given in most of the high schools of the state. Under these conditions there will doubtless be many teachers who will prepare themselves to take charge of these courses.

DISCUSSION AND CORRESPONDENCE

THE INCREASING COST OF STATE GOVERNMENT: ITS EFFECT ON PUBLIC EDUCATION AND A SUGGESTED MEANS OF CONTROL

The term "state government" is here used to include not only the executive and judicial departments of the government, but the educational and eleemosynary institutions and all other enterprises in which the state engages. The rapidly increasing cost of government has for many years attracted the attention of thinking men. So long as there was plenty of money, however, the question failed to arouse to action governors, members of legislatures and others directly charged with the operation of the government.

In more recent years, the cost of government has increased to such an extent that a large number of the states of the Union have found themselves bankrupt, with the gap between income and outgo continually becoming larger, and the problem is at last forcing itself upon the attention of all the people of any state in which such a condition exists. Educational institutions and persons engaged in educational work are particularly interested, for the principle of state aid to education is now recognized in all the states. The majority of the states give aid not only to higher education, but also to high schools and to schools of a lower grade.

It has been the almost universal experience that in any state where the sum of appropriations asked of the legislature greatly exceeds the estimated revenues of the state, the schools are the institutions that suffer most. Many members of legislatures who proclaim themselves to be champions of education place the support of the schools in a secondary position. A few months ago, a member of a committee appointed by a legislature to visit the state university of his state told in a public speech how strong a supporter of public education he was and stated that he favored appropriating to the state charitable institutions and to the executive and judicial branches of the government the money that they needed and then to divide what was left among the educational institutions. This argument pursued to its log-

ical conclusion means that the educational institutions would get nothing if the other institutions needed all the revenue.

It appears that the only possible way to secure adequate state support for public education is either to increase rapidly and largely the revenue raised by taxation or to put a check upon state expenditures for other purposes. In most of the states, the former plan is not practicable, for people are already groaning under the burdens of taxation. The second plan is not only just, but feasible, although, so far as I am aware, no state has yet devised a satisfactory system of control.

The large and rapid increase in the cost of government has been due in the main to two things: first, the establishing of new institutions or new enterprises, and, second, the appropriating by the legislature of sums that are much larger than are necessary for the economical and successful operation of some branch or branches of the government.

At almost every session of any state legislature, people come forward suggesting that the state engage in new enterprises. They have found out that it is quite difficult to induce the legislature to make a large initial appropriation for any such purpose, and, consequently, they generally start with a measure asking for a small appropriation or perhaps no appropriation at all. Sometimes it comes in the guise of giving to the state a school, as, for example, a medical school, which possesses a certain amount of property, with the understanding that thereafter the school shall be a state-supported institution. Sometimes it is a request to establish an agricultural school with the understanding that the community where the school is located will present it with a farm and that in future the farm will produce the greater part of the revenue necessary to support the school. Sometimes it is a proposition to establish a new hospital or an experiment station at no initial cost to the state and without saying anything about appropriations which will be necessary in the future. Sometimes it is the establishment of a new office or commission with the inclusion in the law of a provision to raise in some manner enough money to support the new office or commission. In such cases the legislators are told that it will not cost the state anything.

After the institution, or the new office or commission, is once established, legislatures are prone to look upon it as an established part of the state government and to regard appropriations for its support as necessary. It is very rare that a legislature will take the time and trouble to make such minute and careful examination as would be required to show that a certain institution or office is useless or unnecessary. Furthermore, the political pressure brought to bear by persons directly connected with the various institutions and offices is very difficult to overcome.

Established educational institutions are themselves oftentimes by no means blameless. Many of our public educational institutions are affected with megalomania. One school thinks that it must offer certain courses and have certain equipment and certain buildings because another has them, regardless of what the actual demands and the actual needs may be. This oftentimes results in the establishment of new chairs or departments when the available money could be much better expended in increasing the efficiency of or in adding new teachers to departments already in existence. Sometimes the disease manifests itself in an attempt on the part of a school of secondary grade to expand into a college; or of a college to grow into a university. Before the famous Carnegie report on American medical schools was issued a few years ago, a number of state universities had taken under their protecting care proprietary medical schools which had no excuse for existence.

Especially noteworthy is the striving on the part of educational institutions after appropriations for new buildings, when oftentimes the buildings they already have are in use only a small part of the time that they might be used. This matter has been up for discussion recently in a number of states. In some cases commissions appointed by legislatures to make examinations have turned in reports indicating that in the judgment of the commission all the

rooms of all of the buildings of a school should be in use practically all the time. Such a practise would be going just as much too far in the opposite direction. It is no more desirable that all the rooms in all the buildings of an educational institution should be in actual use all the time than that all the rooms in a dwelling house of a private family should be in constant use.

After institutions and departments of government are once established, each comes to the legislature with its request for appropriations, and the one that has the most political influence back of it and can present its case most effectively is the one that gets the largest appropriations. It is absolutely impossible for the legislature to discriminate between one institution and another and to discover the relative needs of one institution or department of government as compared with another.

In different states, various remedies have been tried in an effort to control governmental expenditures. In some states, the governor is charged with making up the budget; in other states, it is the joint budget committee of the state legislature. Some states have appointed commissions on economy and efficiency to make a thorough study and to report to a succeeding legislature. None of these plans has proved successful. Governors change very rapidly, and the governor is almost always susceptible to political influence. A joint budget committee of the legislature is composed largely of men who are new to legislation and unacquainted with the affairs of government. A committee on efficiency and economy may make a thorough study and an excellent report, but by the time the next legislature meets, the report is probably forgotten. A better plan is the appointment of a continuing committee or commission to effect economy and efficiency in government. In order to give permanency, the members of this commission should be appointed for a long period of years and should be made ineligible for reappointment, or they should be placed under the civil service. Either method would, in very large degree, remove them from the influence of political control.

The duties of this commission would be threefold: first, to make a careful and searching examination into all existing institutions and departments of government and to make recommendations to the governor and to the legislature for the purpose of eliminating duplication and doing away with useless expenditures; second, to scrutinize carefully every new enterprise of every kind which the state is asked to go into and to determine whether it is wise and necessary that the state should embark upon that enterprise; third, to examine into all requests for appropriations, to recommend only such appropriations as are needed, and to see that the sum total of their recommendations does not exceed the estimated revenues.

There would hardly be need of a law that the legislature should make no appropriation that was not recommended by the commission on efficiency and economy. In the first place, unless such a law were incorporated into the constitution, any legislature could repeal it; and in the second place, there is plenty of evidence to show that legislatures are opposed to making appropriations in excess of the revenues and that they do make such appropriations only by reason of the great pressure that is brought upon them, and by reason of the fact that there is no effective method of control.

In passing it might be said that when we are attempting to retrench on public expenditures and to practise economy, we ought to begin at the top where the greatest waste occurs, namely, in the expenditures of the federal government. A few years ago, a man who had for many years been a leader in the United States Senate made the statement that by the application of proper business methods the cost of conducting the United States government could be reduced $300,000,000 a year. He was probably right. The states have no such incentive to extravagance as has the national government. The state must get the bulk of its revenue by direct taxation, for the federal government has already appropriated to itself almost all the means of raising revenue by indirect taxation. The theory on which our national government works seems to be that if a

man does not know he pays a tax he is not hurt.

JOHN C. FUTRALL
UNIVERSITY OF ARKANSAS

THE RELATIVE PROFICIENCY OF COLLEGE STUDENTS

TO THE EDITOR OF SCHOOL AND SOCIETY: I have been much interested in the article by Professor Van Cleave on "The Relative Proficiency of University Students in an Elementary Course in Zoology" appearing in the issue of SCHOOL AND SOCIETY for March 24.

Professor Van Cleave presents data and graphs showing that in the oral quizzes and the final examinations the grade received by the pupil is correlated with the rank of the student in college, *i. e.*, seniors excel juniors, juniors excel sophomores and sophomores excel freshmen, but that in the laboratory course the grades of all four classes are practically identical. The conclusion which Professor Van Cleave draws from this is "that either the student or our system of education places a premium upon training in those processes involving memory and the organization and retention of facts, while the ability to solve new problems, to discover new facts, and to draw correct conclusions from direct observations is but slightly modified by a four years' university course."

It has occurred to me that there is another explanation for the observed facts, or rather that there are two plausible theories and that the true explanation lies somewhere between these two. One of my friends when a senior was asked to respond to the toast "What have you learned at college?" and his reply was "to leave out the unessentials." I believe that it is one of the features of a college course to see that the student learns to distinguish between what is essential and what is explanatory or as our English instructors say "to pick out the topical sentence." The reason why upper classmen excel in class-room grades seems to me to be largely due to the fact that they have concentrated their memory on the essential features of the text or lectures, while the under classmen have not yet learned to differentiate sharply with the result that certain essential points (essential enough to appear in the examination questions) were neglected. Perhaps I am wrong, but I venture the guess that if the seniors and freshmen were given a large series of *non-essential* questions, questions involving petty detail of the text or lecture, the freshman would turn in by far the better papers because he has learned that part about as well as any part while the senior has practically ignored it.

However, there is still another reason why the upper classman may be expected to excel in class-room grades more than in laboratory grades. This lies in the field of the psychologist. The longer a student remains in college the more able does he become to "read" the instructor, to divine what the instructor considers important, to pick out what the examination questions are to be. I remember one final examination in which I took part and upon which a good deal depended. A friend and I got together and picked out 35 or 40 questions that the instructor might ask. We decided he would ask no others and he actually *did* pick all 10 of the questions from our list with the result that we both made 100 per cent. Was it memory, or psychology, or rather a combination of psychology and ability "to leave out the unessentials"? These factors do not apply in an elementary laboratory course.

The ability to discriminate between laboratory essentials and non-essentials comes only after laboratory training, but again I venture the guess that if the lower classmen who have had no laboratory training in any science are plotted against the upper classmen who have had previous laboratory training in some other science, the latter will show the higher laboratory grades.

ROSS AIKEN GORTNER
UNIVERSITY OF MINNESOTA

THE PORTLAND MEETING OF THE NATIONAL EDUCATION ASSOCIATION

TO THE EDITOR OF SCHOOL AND SOCIETY: A number of inquiries have been received concerning a rumor that the Portland meeting of the National Education Association would be abandoned. A careful study of the situation leads to the conclusion that so far as this

country is concerned, we are more certain as to the condition of affairs this summer than we are as to the condition in which we shall find ourselves next summer. To postpone the meeting for one year would be taking a leap in the dark. It is true that there is a feeling of uncertainty in the minds of Americans and a number of conventions have been abandoned. The schools, however, must be continued and the present unusual situation makes it all the more necessary that schoolmen should meet these conditions squarely and, as the result of investigation and conference, determine the ways in which the system can be made to add to the increased efficiency which is desired in this country. Patriotic motives alone should make the Portland meeting the most influential in the history of the association. The program is to be built around the subjects of preparedness, nationalism and patriotism and the schoolmen are able to discuss these questions from an absolutely unbiased standpoint as commercialism does not enter into their work. The attempt to let down the bars so far as child labor is concerned on the plea of patriotism is an attempt in some quarters to again commercialize the productivity of the child. As schoolmen we should meet every certainly determined necessity but, on the other hand, we should stand for the protection of the school children. The necessity for preserving normal conditions as nearly as possible is recognized by those who have made an extended study of the country's needs. Let the schoolmen do their part!

In addition to the regular meetings of the association and its departments, the League of Teachers' Associations, the Council of Primary Education, the Classical Association, the Modern Language Association, the Federation of College Women, the Deans of Women, the American Home Economics Association, the Conference of Education Extension, the School Garden Association and the Council of Teachers of English will all hold meetings at Portland in connection with ours and the United States Deputy Commissioner of Naturalization has called a citizenship convention for the same time. A railroad rate has been granted which is lower than the regular summer tourists rate and while the roads east of Buffalo have not officially taken action in the matter, it is expected that they will meet the rate which has been granted by the western roads. In addition to the serious business of the meeting, an opportunity will present itself for persons to see the most wonderful natural scenery in this country and enjoy an unexcelled climate. For those who wish to add summer school privileges to the regular trip, the summer schools in the northwest afford special advantages this year.

We should be glad to send copies of the National Education Association *Bulletin* to any who may ask for the same.

D. W. SPRINGER,
Secretary

QUOTATIONS

THE SMALL BOARD OF EDUCATION FOR NEW YORK CITY

GOVERNOR WHITMAN is believed to be strongly in favor of the state educational bill which purposes to set up a board of education of seven members in New York City, and for this reason it will probably be futile to oppose the signing of the measure. In all probability it will become the law on January 1, 1918. This will give the present board seven months to clear up its dockets and retire as gracefully as it can. Many people will regret to see the large board of education disappear because it embodies in a much larger degree than a small board can the fine principles of voluntary school and municipal service. There is a compensating reflection and that is if seven commissions be found to be too few, it will be easily possible to increase their numbers by legislation. The present board has accomplished much valuable work and it would be ungracious to dismiss it without fair acknowledgment.

The most important change which the innovation will work will be in the administration of the department of education, not in the size of the board itself. The new plan follows the Cleveland system which makes the city superintendent the manager of the system and leaves

the board of education free from the details of school work with power to plan the course of the schools and direct the educational experts to carry out instructions. This is the essential recommendation of the plan presented to the city authorities by the commission on school inquiry, conducted by Professor Paul H. Hanus, of Harvard, under the general direction of Mr. Mitchel when he was president of the board of aldermen and commended by him, Controller Prendergast and other members of the city administration. The distinctive difference between the Cleveland and New York plans is that under the latter the board of superintendents is retained, although the Hanus Commission recommended that it be abolished, with its present powers preserved in the main, which will give it a voice of authority and prevent the creation of one man power.

The small board can not accomplish as much work through committees as the existing organization does, which has fifteen committees, and, therefore, it will be necessary to transfer a great many details to the professional supervising authorities. The abandonment of the committee system should give the board a larger scope of vision and action, which should enable it to transact business on the spot and the minute. More assistants for the professional authorities will have to be appointed in order to permit the board of education to send them into the schools to institute and supervise new methods of school work. The loose ends must be gathered up. Junior associate superintendents and examiners will be needed. There will also probably be a reorganization of the other departments in the Hall of Education, including the department of supplies, the bureau of buildings, the secretary's office and other divisions in order to obtain unity of purpose and action in the management and development of the school system.—*School.*

THE passage of the Lockwood Education bill will be hailed up-state with approval almost unmixed, and in this city with more favor than disfavor. It organizes for the state a mass of legislation which would fill a tangled volume, reducing it to order and system; and it gives to up-state cities a much greater measure of home rule in educational matters. The reduction of New York City's board of education to seven members acts upon a correct principle, though it may carry that principle too far. It seems questionable whether seven men can find time for the mass of work which falls upon the board of education, and which has hitherto been divided among committees. Yet a special investigating committee of the State Chamber of Commerce has just reported emphatically in favor of this feature, asserting that seven members will adequately represent all interests, and can perform the board's functions efficiently. The protest of President Willcox against the increased power which the bill confers upon the superintendent does not seem justified. A reorganization of the city's educational administration is so much needed that we ought to be willing to accept one correct in its essential lines even if it is faulty in some details.—*New York Evening Post.*

THE DEPARTMENT OF EDUCATION OF WASHINGTON UNIVERSITY[1]

ON May 18, 1915, at a meeting of the board of regents of the University of Washington, "Regent Miller moved that Dean Bolton and Professors Lull and Hart, of the department of education, be elected for one year from August 1, 1915, on condition that each of them file his resignation with the board to take effect not later than August 1, 1916, and that the letter of President Landes, in reference to this matter, be made a part of the minutes of this board." (From the minutes of the regents, May 18, 1915.)

This was in effect a dismissal of the three named with a year's notice. The reasons for this action are contained in the letter of President Landes mentioned in the minutes. This letter was addressed under date of May 17, 1915, to Dean Frederick E. Bolton, Professor Herbert G. Lull and Professor Joseph K. Hart. In it, Mr. Landes says:

[1] Report of the Subcommittee of the American Association of University Professors on the case of Professor Joseph K. Hart, of the University of Washington.

The time has come when official recognition must be taken of the deplorable conditions existing in the department of education. During the past three years, the personal antipathy, animosity and distrust existing among and between you have increased steadily in intensity until now a state of bitterness exists which has destroyed the cooperation and coordination absolutely necessary for the successful administration of any department. . . . This condition of affairs has brought reproach to the institution and can be tolerated no longer. . . .

I am now thoroughly convinced that the general welfare of the university demands that a radical change take place in the personnel of the department of education. It is my plan, at the forthcoming annual meeting of the board of regents, to recommend that you three gentlemen be elected for one year only, with the understanding that you will hand your resignations to the board of regents not later than August 1, 1916.

With each of you, throughout your years of connection with the university, I have had very cordial and pleasant personal relations. I regard each of you as an able teacher and one capable of rendering a fine service to this institution. I need not assure you that my recommendation to the board of regents will be made with the profoundest regret that such a step seems necessary.

At the same meeting of the board of regents (May 18, 1916), Professor Hart was granted a leave of absence for one year on his request. After receiving notice of his dismissal, he sought to forego his leave, asking to be appointed his own substitute for the year. This request was opposed by Dean Bolton and denied by President Suzzallo (who had taken office July 1, 1915). In a letter dated July 30, 1915, the latter said:

My investigations of your relations with the department of education indicate that you could not be fully cooperative under the present strained conditions. And so, for the good of the department and the university, as well as for your own best working power and usefulness, it is better not to appoint you as your own substitute, as you had requested.

Under the circumstances, you express a preference not to file the resignation conditional to your appointment for the next academic year. I think, therefore, I shall follow your preference as to a final settlement of the whole matter and let your connection with the university cease automatically July 31, 1915.

I am returning the resignation which you were kind enough to send for my use in case it seemed best to handle the matter by a method less congenial to you.

The preference of Professor Hart mentioned in this letter is expressed in a letter to President Suzzallo dated July 22, 1915, as follows:

I have no interest in resigning in order to hold this job for another year. I have every interest in being of service to the state, the university, my profession and the student body just as long as possible. I should like to remain here another year, if I can render service; if I can not, I know that the remaining will be formal and useless.

The connection of Professor Hart with the university was accordingly severed July 31, 1915. Professor Lull remained in the university until the following spring when he was called to the State Normal School at Emporia, Kansas. Dean Bolton remained also, and was reinstated in February, 1916.

It was this reinstatement of Professor Bolton which called forth a letter (dated February 28, 1916) from Professor Hart addressed to Dean John H. Wigmore, president of the American Association of University Professors, in which he said:

I want to call to your attention the situation which exists in the University of Washington, and ask that you appoint a committee of your association to investigate the matter.

Last May, at the annual meeting of the board of regents, Acting President Landes recommended that Dean F. E. Bolton, Associate Professor Lull and myself (an assistant professor) all of the department of education should be reelected to the faculty for another year on the condition that we should all hand in our resignations to take effect before the end of the new year for which we were being reelected. The ostensible and avowed reason for this action was that there was a lack of cooperation in the department. The regents approved the recommendation. In addition, a leave of absence for the ensuing year (which I had asked for, previously) was granted me—which meant that I was almost immediately released from active connection with the university.

Now, it was freely charged at the time, charges appearing in several papers, and being voiced by representative men and women of the city and state, that the whole matter was a political "frame

up," for the express purpose of getting rid of *me;* that there was no intention of dismissing Dean Bolton; that there were no real charges against Associate Professor Lull; but that, since I had been very active in all sorts of social and civic work, and since my name had been freely mentioned in caucus of the majority party of the legislature as one who must be got rid of, the real object of the move was to secure my dismissal, using a *departmental* difficulty to hide the *political* nature of the action, thus making it all seem like a purely *educational* affair. I have made no public statement about the matter, waiting to see what the ultimate outcome would be. That outcome has been reached this past week: *Dean Bolton has been retained in the university* as it was freely predicted he would be; Associate Professor Lull has been eliminated, not because there were any real charges against him, but (as it seems to me) in order to prove that *my* removal was not *political.*

THE OHIO STATE BOARD OF EDUCATION

THE following is the text of the Wright law passed by the General Assembly of Ohio. Under its provisions Ohio is to have the first State Board of Education in the history of the state.

Section 1. The provisions of an act of congress entitled, "An act to provide for the promotion of vocational education; to provide for cooperation with the states in the promoting of such education in agriculture and the trades and industries; to provide for cooperation with the states in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditures," are hereby accepted by the state of Ohio.

Section 2. The benefits of all funds appropriated under the provisions of said act are hereby accepted as to:

(*a*) Appropriations for the salaries of teachers, supervisors and directors of agricultural subjects.

(*b*) Appropriations for salaries of teachers of trade, industrial and home economics subjects.

(*c*) Appropriations for the preparation of teachers of agricultural, trade, industrial and home economics subjects.

Section 3. Six members. In order to carry out the provisions of this act, there is hereby created the state board of education, which shall consist of the superintendent of public instruction and six appointive members, who shall be persons of recognized standing and ability in business, the professions, industry or the trades, to be appointed by the governor. Not more than three of the appointive members shall be members of the same political party. Two of the six appointive members shall be appointed for a period of two years; two for a period of four years, and two for a period of six years, and at the expiration of their terms their successors shall be appointed for terms of six years each. The board shall elect one of its appointive members to serve as president.

Section 4. The superintendent of public instruction shall serve as secretary of the board and shall designate some employee of the department of public instruction to act as clerk, who shall take charge of all papers and perform all clerical work in connection with the meetings of the board. Regular meetings of the board shall be held at the office of the superintendent of public instruction and special meetings may be held at any place within the state, upon the call of the president or of a majority of the board. No compensation shall be paid to any member of the board, but each shall receive his necessary and actual expenses incurred in attending meetings and while engaged in performing the duties imposed by this act. All such expenses and any other expenses incurred by the board in the official conduct of its business as authorized in this act shall be paid upon receipt of itemized bills authorized by the board and approved by the president. Vouchers for said bills shall be drawn by the auditor of state, payable from appropriations made by the General Assembly.

Section 5. The state board of education shall have all necessary authority to cooperate with the federal board for vocational education in the administration of said act of congress and of any legislation pursuant thereto enacted by the state of Ohio under the provisions of this act, and in the administration of the funds provided by the federal government and the state of Ohio for the promotion of vocational education in agriculture, commercial, industrial, trade and home economics subjects. They shall have full authority to formulate plans for the promotion of vocational education in such subjects as an essential and integral part of the public-school system of education in Ohio; and to provide for the preparation of teachers of such subjects. They shall have authority to make studies and investigations relating to prevocational and vocational education in such subjects; to promote and aid in the establishment by local communities of schools, departments and classes, giving training in such subjects; to cooperate with local communi-

ties in the maintenance of such schools, departments and classes; to establish standards for the teachers, supervisors and directors of such subjects; and to cooperate in the maintenance of schools, departments or classes supported and controlled by the public for the preparation of teachers, supervisors and directors of such subjects.

Section 6. Vocational departments. Any school, department or class giving instruction in agricultural, commercial, industrial, trade and home economics subjects approved by the state board of education and any school or college so approved, training teachers of subjects which receive the benefit of federal moneys as herein provided, shall be entitled also to receive for the salaries of teachers of said subjects, an allotment of state money equal in amount to the amount of federal money which it receives, as herein provided, for the same year. The state board of education shall recommend to each session of the general assembly the amount of money which will need to be appropriated by the state for such allotments during the succeeding biennial period.

Section 7. The state treasurer is hereby designated as the custodian of all funds received from the United States treasury for vocational education under the terms of this act. All moneys so received or appropriated by the state of Ohio for the purposes contemplated in the act of congress and in this act, or in acts supplementary thereto, shall be disbursed in accordance with law, upon the order of the state board of education.

EDUCATIONAL RESEARCH AND STATISTICS

THE RELATIVE STANDING IN COLLEGE OF GRADUATES ENTERING VARIOUS PROFESSIONS[1]

THE purpose of this investigation was to determine the intellectual character of graduates of Harvard College entering various professions in so far as that might be ascertaind by their records in college work. In all, 2,145 cases were investigated including graduates of the classes of 1901, 1902, 1903, 1904 and 1905, those classes being selected because they were recent enough to illustrate present conditions and yet permit finding the graduates in relatively settled occupations. Not all graduates could be included in the investigation, since it was not possible to secure information concerning their occupations in some cases. The professions and occupations considered were selected on the basis of the classification employed in the official Harvard publications. Some occupations could not be classified separately because of the limited number of cases. Even in some occupations listed the numbers of cases are too small to warrant the drawing of reliable conclusions.

The college records for the junior and senior years of each graduate were examined and the necessary tabulations made. It is believed that the records of work done in the last two years of the college course would give a more reliable measure of the intellectual character of the graduates than their records for all four years of the college course by avoiding the dangers of measuring the students' capacity before they have found themselves in college work. Manipulation of the material for statistical purposes necessitated the transmutation of the literal values (A, B, C, etc.) employed in the college records into numerical values. Instead of following the common method of assigning arbitrary values to the letters of the original records it was decided to interpret the literal values in terms of the relative frequency of the literal values assigned. This plan assumes that in the long run the relative values of all literal grades above the grade of greatest frequency vary inversely as their frequencies and the relative values of those grades below the grade of greatest frequency vary directly as their frequencies. In this way the following values (valid for comparative purposes) were determined as follows: A = 20, B = 12, C = 10, D = 4, E = 1. Any other set of values which maintained the same ratios might as well have been employed since relative standing alone is involved.

After the average standing of each individual had been determined distribution tables were made showing the proportion of each professional group falling in the lowest third, the middle third, and the highest third of all cases considered. The results are presented in the following tables:

[1] This study was made through the division of education at Harvard University. The author is indebted to Professor Walter F. Dearborn and to Professor Alexander Inglis.

Occupations	29 Subjects				English			
	Number Cases	Tertiles			Number Cases	Tertiles		
		Lowest, Per Cent.	Middle, Per Cent.	Highest, Per Cent.		Lowest, Per Cent.	Middle, Per Cent.	Highest, Per Cent.
1. Education and social service...	307	14	32	54	175	18	24	58
2. Medicine	141	37	34	29	93	34	43	23
3. Law	486	23	34	43	374	24	32	44
4. Ministry	52	15	32	53	41	19	27	54
5. Engineering and architecture..	160	30	34	36	64	42	36	22
6. Manufacturing	200	44	35	21	135	40	29	31
7. Business	550	46	33	21	396	46	34	20
8. Journalism	53	30	41	29	47	30	28	42
9. Agriculture	43	56	30	14	29	50	36	14
10. All other occupations	153	49	25	26	143	35	44	21
Total cases considered	2,145				1,497			

Occupations	Philosophical Studies				Science[2]			
	Number Cases	Tertiles			Number Cases	Tertiles		
		Lowest, Per Cent.	Middle, Per Cent.	Highest, Per Cent.		Lowest, Per Cent.	Middle, Per Cent.	Highest, Per Cent.
1. Education and social service...	136	18	28	54	111	19	34	47
2. Medicine	80	34	37	29	117	31	39	30
3. Law	266	24	34	42	120	37	36	37
4. Ministry	42	16	24	60	13	23	54	23
5. Engineering and architecture..	48	37	23	40	116	26	29	45
6. Manufacturing	48	46	34	20	80	45	35	20
7. Business	280	44	36	20	195	43	31	26
8. Journalism	38	26	44	30	14	43	22	35
9. Agriculture	21	52	33	15	24	42	42	16
10. All other occupations	73	40	30	30	55	42	31	27
Total cases considered	1,032				845			

Occupations	Social Science[3]				Foreign Languages[4]			
	Number Cases	Tertiles			Number Cases	Tertiles		
		Lowest, Per Cent.	Middle, Per Cent.	Highest, Per Cent.		Lowest, Per Cent.	Middle, Per Cent.	Highest, Per Cent.
1. Education and social service...	185	20	28	52	203	19	30	51
2. Medicine	96	30	39	31	80	40	26	34
3. Law	445	22	32	46	221	23	37	40
4. Ministry	43	18	33	49	34	12	21	67
5. Engineering and architecture..	91	35	34	31	60	29	42	29
6. Manufacturing	185	41	31	28	124	43	35	22
7. Business	498	44	34	22	344	43	34	23
8. Journalism	41	26	51	23	26	43	19	38
9. Agriculture	38	55	32	13	27	48	30	22
10. All other occupations	103	38	35	27	88	38	33	29
Total cases considered	1,725				1,207			

Ranking professions in the order indicated by the percents of graduates entering them from the highest thirds of various subject classes or in terms of the per cents. entering them from the two upper thirds of classes we obtain the results presented in the following table:

In the case of three occupations (ministry, journalism and agriculture) the small num-

[2] Including mathematics, chemistry, physics, engineering, astronomy.

[3] Economics, history, government.

[4] French, German, Greek, Italian, Latin, Semitic, Spanish.

	Highest Third						Two Upper Thirds					
	English	Philosophy	Science	Social Science	Foreign Language	29 Subjects	English	Philosophy	Science	Social Science	Foreign Language	29 Subjects
Education, etc.	1	2	1	1	2	1	1	2	1	2	2	1
Ministry	2	1	8	2	1	2	2	1	2	1	1	2
Law	3	3	3	3	3	3	3	3	4	3	3	3
Engineering, etc.	7	4	2	4	6	4	7	6	2	6	4	4
Medicine	6	6	5	4	5	5	5	5	5	5	5	6
Journalism	4	5	4	8	4	5	4	4	6	4	7	4
Manufacturing	5	7	8	6	8	7	6	8	8	7	7	7
Business	8	7	6	9	7	7	8	7	6	8	6	8
Agriculture	9	9	9	9	8	9	9	9	9	9	9	9

ber of cases available for examination makes the reliability of the results secured of doubtful value in attempting to estimate the relative standing in college of graduates entering those occupations. For the other occupations listed, however, the figures secured afford a valuable basis for estimating the probable relative standing in college work of graduates entering them. Especially noteworthy is the relatively high selection of students entering the professions of education, the ministry, law, and perhaps engineering. Noteworthy also is the relatively low selection of students entering manufacturing and business.

From the data presented several important conclusions appear warranted:

i. As far as the records received by students in college work may be assumed to indicate intellectual ability it would seem that the relative standing of Harvard College graduates entering various professions would be somewhat as follows: (1) education and social service, (2) the ministry,[5] (3) law, (4) engineering, (5) and (6) journalism[5] or medicine, (7) manufacturing, (8) business, (9) agriculture.[5]

ii. In every one of the subject groups examined students later entering the profession of education maintain a relatively high standing, somewhat more than one half on the average coming from the highest third of the classes.

iii. On the average students later entering the ministry maintain a relatively high standing in college work, about one half of the group coming from the highest third of the classes except in natural-science courses.[5]

[5] The small number of cases examined conditions the reliability of the conclusions drawn.

iv. On the average students later entering the profession of law maintain a relatively high standing in college work, somewhat more than two fifths coming from the highest third of the class.

v. Students later entering the profession of engineering tend to be somewhat above the average in college standing, somewhat more than one third coming from the highest third of their classes. Considerably greater variability is here manifest, however, their ability being noticeably strong in natural science, and noticeably below average in English.

vi. Students entering the profession of medicine are apparently somewhat below students entering some other professions, less than one third coming from the highest third of the classes on the average. Particularly noticeable is the fact that they do not on the whole manifest any special ability in natural science.

vii. Students later entering the field of journalism, as would be expected, manifest their greatest strength in English. Nevertheless their ability in that special field is not as great as might be expected.[5]

viii. Students later entering the fields of manufacture and business apparently come from a relatively low portion of the student body. This is not, perhaps, greatly to be wondered at since these are fields into which a large proportion of students drift frequently without special intention and in part as the result of having no special profession. It is particularly noticeable that such students do not manifest special aptitude for or ability in the economic sciences.

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